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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,505	02/11/2004	Robert William Dobbs	200209625-1	5267

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HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER

AMAYA, CARLOS DAVID

ART UNIT	PAPER NUMBER
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2836

MAIL DATE	DELIVERY MODE
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07/11/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/777,505

Applicant(s)

DOBBS ET AL.

Examiner

Carlos Amaya

Art Unit

2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/12/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 6-8 and 12-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-8 and 12-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This communication is responsive to amendments filed on 3/12/2007.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3,6-8,12-17 rejected under 35 U.S.C. 103(a) as being unpatentable over Koch (US 6,153,946) in view of Coglitore (US 2004/0228087) in view of Slade (US 5,861,684).

With respect to claim 1 Koch discloses a power distribution system comprising: one or more loads (Device circuits 28, 30 and 32); a plurality of power sources (Power supplies 20, 22, 24 and 26), and an interconnect arrangement including a plurality of interconnects (Power sharing cables 60, 62 and 64), the interconnects connecting each load to a given number of the sources so that each load is fully powered and if any one source fails, all loads of the at least one load remain fully powered (As shown in figure 1A each device 14, 16 and 18 are interconnected with their own power supplies and the power supplies of the other devices providing redundancy to each of the device circuits when one of the power supplies fails, see abstract).

Koch, however, does not disclose expressly that each load is operable to be mounted in a rack location; and that each power source is operable to be mounted in a

Art Unit: 2836

rack location not having a load. And that each power source having a capacity less than each load.

Coglitore discloses on page 9 paragraph (0078) and paragraph (0081), that power supplies modules 6 and computing units 8 (loads) of figures 7A, 7B and figure 9 are housed in separate racks. The power supplies are mounted in the rack without a load, as described by Coglitore.

Slade discloses that each of the power sources supply a 1500 watts of power to a rail that needs to supply 3000 watts to a load. Thus each of the sources has a capacity less than the load.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Coglitore with the invention disclosed by Koch and Slade.

The suggestion or motivation for doing so would have been to facilitate the cooling of the electronic components as disclosed by Coglitore. And to provide a fault tolerant and less costly system (Slade col. 2 lines 22-25).

With respect to claim 2 Koch in view of coglitore in further view of Slade disclose the power distribution system of claim 1, wherein all of the sources are DC sources (Koch, Column 3 lines 38-41).

With respect to claim 3 Koch in view of coglitore disclose the power distribution system of claim 1 wherein all of the sources are AC sources (Koch, Column 3 lines 41-46).

With respect to claim 6 Koch in view of Coglitore in further view of Slade disclose the power distribution system of claim 1 wherein one or more loads, power sources and interconnect arrangement comprises a power distribution subsystem, wherein the one or more load includes a load (Device circuits, Device 88), wherein the plurality of sources includes first, second, and third sources (Power supply of Devices 88, 90 and 92), and wherein the interconnect arrangement includes interconnects that connect the load to each of the first, second, and third sources (As can be seen on figure 3 Power sharing cables 94, 96 and 98 they interconnect with the Device circuits of Device 88, so that power can be shared between the different power supplies).

However, Koch in view of Coglitore in further view of Slade does not disclose expressly that the load (Device 88) is a 4X watts load and that the first, second, and third sources are 2X watt sources. One of ordinary skill in the art would have provided sources that supply an equal or greater power than that consumed by the load as disclosed by Koch (Column 7 lines 49-60). Therefore it would have been obvious to one of ordinary skill in the art to provide Koch invention with three power sources that when combined together supplied an amount of power that is greater than the power consumed by a load.

With respect to claim 7 Koch in view of Coglitore in further view of Slade disclose the power distribution system of claim 1 wherein the at least one load, power source and interconnect arrangement comprises a power distribution subsystem, however, Koch in view of Coglitore and Slade does not disclose expressly that the at least one load includes a 5X watt load, and the plurality of sources includes first, second, third,

Art Unit: 2836

fourth, fifth, and sixth 2X watt sources, and wherein the interconnect arrangement includes interconnects that connect the 5X watt load to each of the first, second, third, fourth, fifth, and sixth 2X watt sources.

Slade discloses Bulk supplies A, B, C, D and Batteries A, B, C, D that power two power rails A 2 and B 3. With a total power in the rail of 3000 Watts with 2N configuration, thus one of ordinary skill in the art would have connected the 5X watt load to Koch and Coglitore system and still have enough power to supply the load. Power rails interconnect each of the sources with the load; the loads in Slade invention are "CRUs" of a computer system.

With respect to claim 8 Koch in view of Coglitore in further view of Slade disclose the power distribution system of claim 1, Koch and Coglitore and Slade, however, do not disclose expressly that the at least one load includes a 10X watt load, wherein the plurality of sources includes first, second, third, fourth, fifth, and sixth 2X watt sources, and wherein the interconnect arrangement includes interconnects that connect the 10X watt load to each of the first, second, third, fourth, fifth, and sixth 2X watt sources.

Slade discloses Bulk supplies A, B, C, D and Batteries A, B, C, D that power two power rails A 2 and B 3. With a total power in one of the rails being 3000 Watts with 2N configuration, thus one of ordinary skill in the art would have connected the 10X watt load to Koch and Coglitore system and also change the bus bar switch 15 of figure 1 to connect the Bulk supplies B and D to Rail A 2 so that the rail can now have 6000 Watts. Thus, have enough power to supply the 10X watts load.

Art Unit: 2836

The suggestion or motivation for doing so would have been to provide a redundant system with power supplies that are reliable and able to provide power to the loads when one or more power sources are disabled, thus increasing reliability of the redundancy of the system without having to worry about the load being without power.

With respect to claim 12 Koch in view of Coglitore in further view of Slade disclose the power distribution system of claim 1 wherein the at least one load includes a load (Device circuits of Device 88), wherein the plurality of sources includes first, second, and third sources (Power Supply Device 88, Power supply Device 90, Power Supply Device 92), and wherein the interconnect arrangement (Power sharing cables 94, 96 and 98) includes interconnects that connect the load to each of the first, second, and third sources, and wherein the interconnect arrangement includes interconnects that connect the load to each of the first, second, and third sources (As shown in figure 3 the Device circuit 88 is connected by means of Power sharing cables 94, 96 and 98 to the three power supplies, Column 7 lines 45-48).

However, Koch in view of Coglitore in further view of Slade does not disclose expressly that the load is an 8X watts load, and that the first, second, and third Source are 4X watts sources. Koch discloses that the power sources have to supply the loads with an equal or greater power than that consumed by the loads (Column 7 lines 49-60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide sources in Koch invention that produce greater power than the power consumed by the load when combined together, namely to have one load and three power sources that each produced half the power consumed by the load,

Art Unit: 2836

since the load is connected to each of the power supplies when one supply fails the other supplies provide the necessary power to the load.

The suggestion or motivation for doing so would have been to have power supplies that produces enough power to supply a load when one of the power supplies fails, thus increasing reliability of the redundancy of the system without having to worry about the load being without power.

With respect to claim 13 Koch discloses a power distribution system comprising: a plurality of loads (Device circuits 28, 30 and 32); a plurality of power sources (Power supplies 20, 22, 24 and 26), the power sources having a collective capacity to fully power all of the loads (Column 4 lines 25-30), and an interconnect arrangement including a plurality of interconnects (Power sharing cables 60, 62 and 64), the interconnects connecting each load to a given number of different ones of the sources so that each load is fully powered notwithstanding failure of any one of the sources (As shown in figure 1A each device 14, 16 and 18 are interconnected with their own power supplies and the power supplies of the other devices providing redundancy to each of the device circuits when one of the power supplies fails, see abstract).

Koch, however, does not disclose expressly that each load is operable to be mounted in a rack location; and that each power source is operable to be mounted in a rack location not having a load. And that each power source having a capacity less than each load.

Coglitore discloses on page 9 paragraph (0078) and paragraph (0081), that power supplies modules 6 and computing units 8 (loads) of figures 7A, 7B and figure 9

Art Unit: 2836

are housed in separate racks. The power supplies are mounted in the rack without a load, as described by Coglitore.

Slade discloses that each of the power sources supply a 1500 watts of power to a rail that needs to supply 3000 watts to a load. Thus each of the sources has a capacity less than the load.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the teachings of Coglitore with the invention disclosed by Koch and Slade.

The suggestion or motivation for doing so would have been to facilitate the cooling of the electronic components as disclosed by Coglitore. And to provide a fault tolerant and less costly system (Slade col. 2 lines 22-25).

With respect to claim 14 Koch in view of coglitore in further view of Slade disclose a method of distributing full power to each one of a plurality of loads, each load operable to be mounted in a rack location, the method comprising: providing a plurality of power sources, each power source having a capacity less than each load and operable to be mounted in a rack location not having a load, the power sources being sufficient in number and capacity such that a combination of less than all of the sources is sufficient to power each load; and connecting each load to a given number of the sources so that if any one source fails, each of the loads remains fully powered. One of ordinary skill in the art would have necessarily performed the recited method steps when using the power distribution system of claim 1, as disclosed by Koch in view of Coglitore in further view of Slade.

Art Unit: 2836

With respect to claim 15 Koch in view of Coglitore in further view of Slade disclose the power distribution system of claim 1 wherein the one or more loads include first and second 5X watt loads, wherein the plurality of sources include first, second, third, fourth, fifth, and sixth 2X watt sources, and wherein the interconnect arrangement includes interconnects that connect the first 5X watt load to each of the first, second, third, fourth, fifth, and sixth 2X watt sources and the second 5X watt load to each of the first, second, third, fourth, fifth, and sixth 2X watt sources, X having a numeric value.

Slade discloses Bulk supplies A, B, C, D and Batteries A, B, C, D that power two power rails A 2 and B 3, and a plurality of loads 1-N. The loads are being power/interconnected by the rails. The power sources have to adjust their power in order to supply each of the loads with a corresponding power (Column 3 lines 5-10).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modify the system disclosed by Koch and Coglitore to include the power supplies and the loads disclosed by Slade and interconnects that connect each of the loads to two of the power sources.

With respect to claims 16-17 Koch in view of Coglitore in further view of Slade disclose the power distribution system of claim 1 wherein the number of sources is three-times the number of loads and six-times the number of loads. Slade discloses power sources 10-13, 18-21 and loads No. 1 through load No. N, thus it would have been obvious to one of ordinary skill in the art to combine the number of sources and loads as desired.

Art Unit: 2836

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Amaya whose telephone number is (571) 272-8941. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (571) 272-2800. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CA

A handwritten signature in black ink, appearing to read 'M. Sherry', with the date '7/2/09' written below it.

MICHAEL SHERRY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800